

Appl. No. : **10/621009**
Filed : **July 15, 2003**

REMARKS

Claims 50 and 67 have been amended. Support for the amendments is found in the specification and claims as filed. No new matter is added by the amendments. Claims 1-17 and 50-70 are pending. Claims 71-74 are withdrawn.

Restriction

The Office Action states that Claims 71-74 are the subject of Group II of the previous election requirement, and, therefore are withdrawn as non-elected. Applicants respectfully traverse. Applicants respectfully submit that Claims 71-74 are dependent from claims of Group I, and, thus, examination of Claims 71-74 would not be unduly burdensome. Accordingly, Applicants respectfully request rejoinder of Claims 71-74.

Priority

The status of priority applications has been updated as requested. Accordingly, Applicants request withdrawal of this objection.

Objection to the Specification – New Matter

Applicant has amended the specification as requested. Accordingly, Applicant respectfully requests that this objection be withdrawn.

Claim Rejection – 35 U.S.C. § 102(b)

Claims 1, 4-7, 9, 10, 13-16, 50, 53-56, 58, 59 and 62-65 are rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent 5,424,413 (hereinafter “Hogan”). Claims 1 and 9 are directed to primer pairs that readily associate with each other to form a stem structure in the absence of a target nucleic acid. Claims 4-7, 10, 13-16, 50, 53-56, 58, 59 and 62-65 depend from either Claim 1 or Claim 9.

Hogan discloses nucleic acid probes comprising one or more nucleic acid molecules together having at least two separate target regions which hybridize with a target nucleic acid and at least two arm regions, wherein said arm regions do not hybridize with said target nucleic acid or

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with each other in the absence of said target nucleic acid. This was acknowledged in the last Office Action, which states, “Hogan teaches the probes form branched nucleic acid structures upon interaction with and hybridization to a target nucleic acid.”

Unlike Hogan, the claimed primer pairs readily associate with each other to form a stem structure in the absence of a target nucleic acid.

The Office Action points to Figures 15C and 15D of Hogan, which are discussed in Example 9, as describing DNA/RNA polymerase extension by the nucleic acid probes. Figures 15C and 15D teach a shortened non-target 3'-stem region which, in the presence of a target nucleic acid sequence, hybridized to a portion of the 5' non-target stem region to produce a non-target stem structure. The 3' non-target stem region is then extended by a polymerase along the non-target stem of the 5' non-target stem. However, neither Figure 15C nor 15D disclose primer pairs that readily associate with each other to form a stem structure in the absence of a target nucleic acid. In addition, Hogan also does not disclose a primer pair with an anchor primer having a 3'-end which is not capable of priming nucleic acid synthesis, as recited in Claims 1 and 9.

Furthermore, Hogan does not teach a region of the stem structure that is complementary to a universal primer. Accordingly, Hogan does not disclose all elements of the claimed primer pairs. Therefore, Applicants respectfully request removal of the rejection of the claims as anticipated by Hogan.

Claim Rejection – 35 U.S.C. § 102(e)

Claims 1-2, 4-17, 50-52, 54-70 are rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent 6, 197, 556 (hereinafter “Ulanovsky”).

Claims 1 and 9 are directed to primer pairs that readily associate with each other to form a stem structure in the absence of a target nucleic acid. Claim 67 is amended to indicate that the recited primer pairs self-assemble in the absence of target nucleic acid. The remainder of the claims depend from either Claim 1, 9 or 67. Accordingly, all claims are directed to primer pairs that assemble in the absence of a target nucleic acid.

Ulanovsky teaches modular branched primers for nucleic acid amplification. However, nowhere in Ulanovsky is it disclosed that the branched primers assemble in the absence of the target

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nucleic acid. Accordingly, Applicant respectfully submits that Ulanovsky does not anticipate the claimed primer pairs.

Claim Rejection – 35 U.S.C. § 103

Claims 3 and 53 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Ulanovsky in view of U.S. Patent 6,287,772 (hereinafter “Stefano”).

As discussed above, Ulanovsky does not teach or suggest that the branched primers assemble in the absence of the target nucleic acid. Stefano does not cure that which is lacking in Ulanovsky because Stefano also does not teach or suggest primer pairs that readily associate with each other to form a stem structure in the absence of a target nucleic acid. Accordingly, Ulanovsky and Stefano, alone or combined, do not teach or suggest all elements of the claimed primer pairs. Therefore, Applicants respectfully request removal of the rejection of the claims as obvious over Ulanovsky and Stefano.

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CONCLUSION

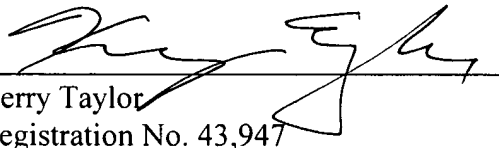
In view of the above, Applicants respectfully maintain that claims are patentable and request that they be passed to issue. Applicants invite the Examiner to call the undersigned if any remaining issues might be resolved by telephone.

Please charge any additional fees, including any fees for additional extension of time, or credit overpayment to Deposit Account No. 11-1410.

Respectfully submitted,

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AMEND

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